

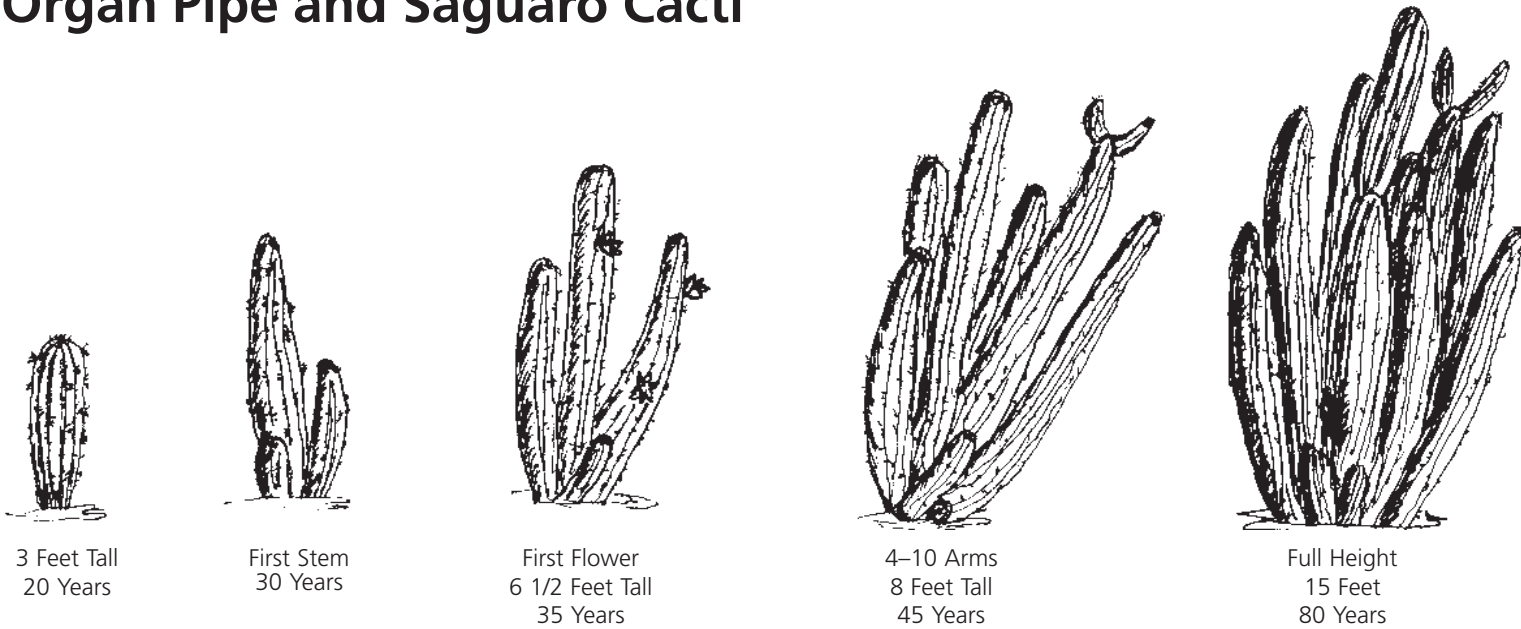
# Organ Pipe Cactus

National Park Service  
U.S. Department of the Interior



Organ Pipe Cactus National Monument

## Organ Pipe and Saguaro Cacti



Age based upon average annual growth of 2.5 inches per stem

### No Work for Cactus Nannies

Organ pipe cactus (*Stenocereus thurberi*) and its more famous relative, the saguaro (*Carnegiea gigantea*) are both columnar cacti. They have many characteristics in common, yet each is a distinct species with different growth patterns.

Unlike saguaro, organ pipe does not need a nurse plant to help get it started. Most organ pipe cactus grow out in the open in totally unprotected settings.

### Cool Neighborhoods

Organ pipe cactus originated in the warm, dry tropics. When the global climate warmed at the end of the last Ice Age, the cactus slowly began migrating farther and farther north. It arrived in this neighborhood only about 3500 years ago. Cold winter nights with sub-freezing temperatures limit its range to the north and east. Sub-freezing temperatures will kill young tissue at the end of the stems. When growth begins again, the results are indentations. Bumpy stems are a record of previous battles with unusual cold.



### Warm Neighborhoods

Cold winter temperatures happen infrequently here, at the northern limit of the organ pipe cactus range. Within the Monument, organ pipe cactus favor warm locations such as the dark volcanic rocks on south- and east-facing hillsides. During daylight these rocks absorb more solar heat than lighter colored rocks. At night they slowly release that heat, wrapping the tropical cactus in blankets of warm air. These warm air blankets protect the cactus from frostbite.

### Showing Off in “Just Right” Neighborhoods

Organ pipe produce their first flower near the age of 35. These showy blossoms are a beautiful creamy color tinged with lavender. Each flower lasts only a few hours. It opens at night and closes by mid-morning. This leaves very little time for daytime pollinators to feast on the sweet nectar. Lesser long nosed bats (*Leptonycteris curasoae yerbabuena*) do most of the night pollination and, over centuries, have developed a unique relationship with these cactus.

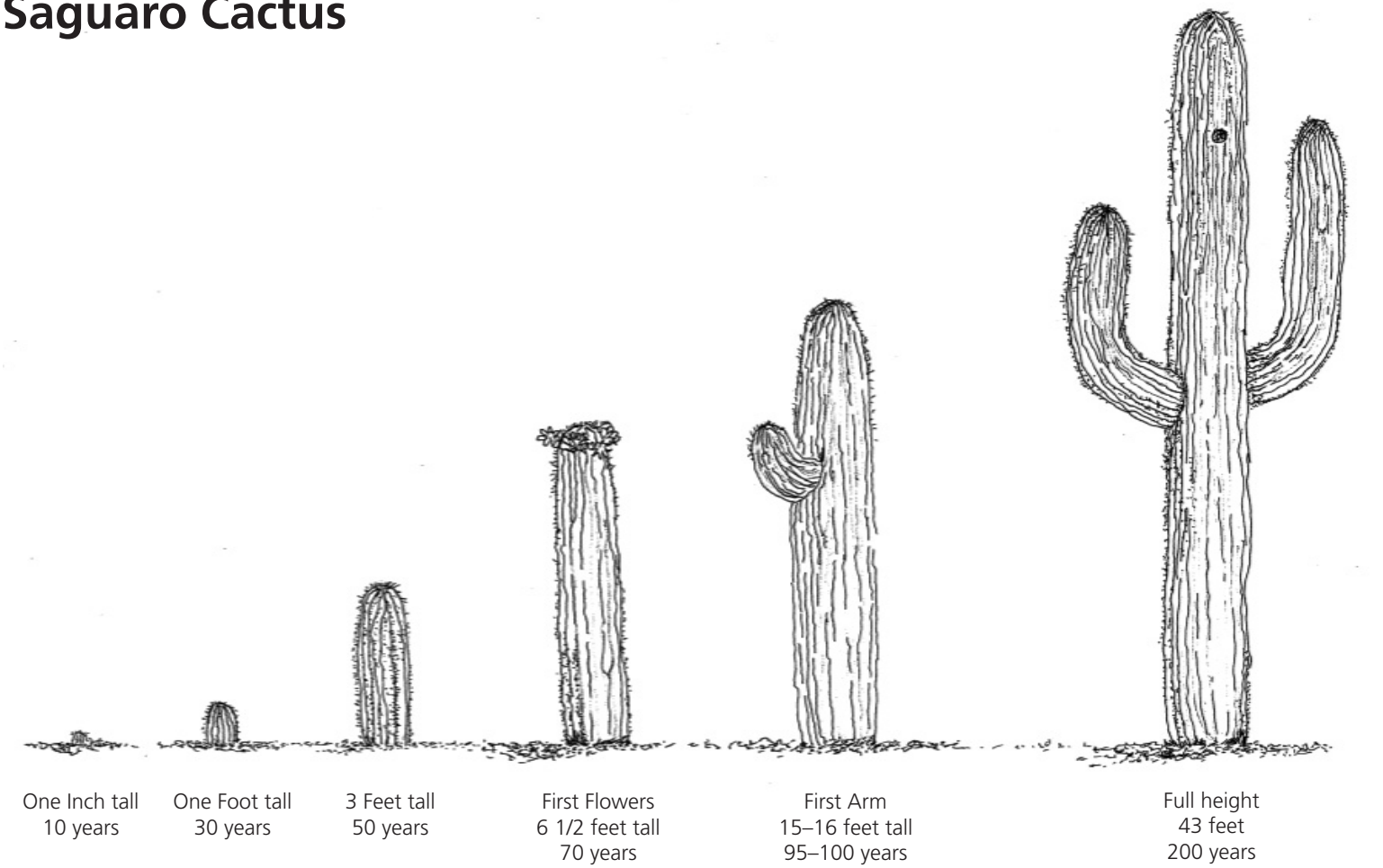
Organ pipe cactus thrive in the Sonoran summer. High temperatures plus the monsoon rains of July and August trigger the greatest cactus

growth. Within the monument boundaries an average organ pipe cactus stem grows about 2.5 inches per year. An entire plant lives an estimated 150 years.

The monument offers the best growing locations for these columnar cactus in the USA. Optimum growing conditions exist no more than a 40–50 mile radius north of the monument. Beyond this distance, conditions are not suitable. The cactus will seldom occur naturally in these areas except in very isolated locations. Organ pipe cactus is particular where it grows.

All data from Yetman, David, The Organ Pipe Cactus, University of Arizona Press, Tucson, AZ 2006, and Dennis Casper, Organ Pipe Cactus Fact Sheet, (Unpublished), 2005

# Saguaro Cactus



Age based upon average annual growth within the monument.

## How Does It Grow?

A single saguaro cactus (*Carnegiea gigantea*) can produce millions of seeds in its lifetime (estimated 20–40 Millions). Only a few of these seeds actually sprout. Even fewer grow to maturity. The most successful cactus begins its growth under the shade of a larger plant, commonly called a nurse plant.

Almost any plant can become a nurse plant. Shade from the nurse plant protects the delicate cactus seedling from temperature extremes and

sunburn. Shaded soil holds moisture longer. Slowly decaying leaf litter adds nutrients. Leaf litter hides the tender young plant from hungry birds or animals seeking a juicy bite of salad.

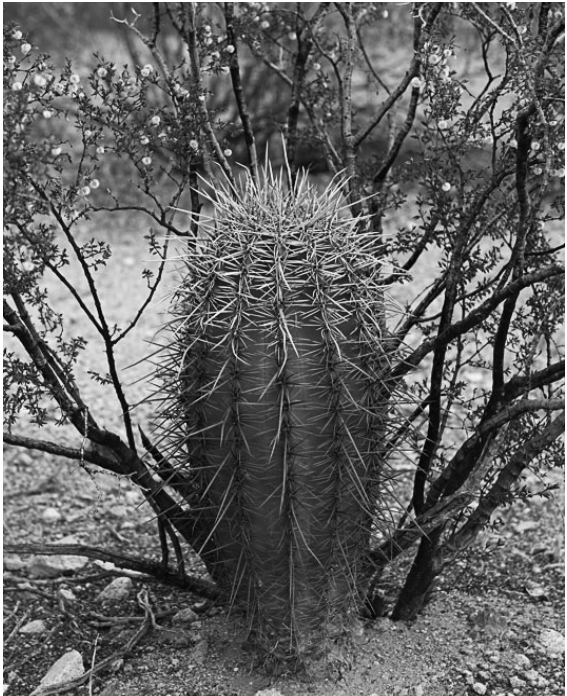
The saguaro cactus seedling grows best in this protected, humid environment and enriched soil beneath its nurse plant. It grows very, very slowly.

## How Old Is It?

No one knows for certain. Estimating the age of a cactus is difficult. There are no annual growth rings, as there are in trees. Rainfall, soil conditions and exposure to sunlight all influence the rate of growth for a saguaro cactus.

Long-term scientific studies plus photographic records and other data aid researchers in estimating the age of saguaro cactus.

The data used here was determined from saguaro growing at the mouth of Alamo Canyon within the monument. Age and height relationships will vary in other parts of the Monument and in other parts of the Sonoran Desert. For instance, in a wetter environment such as that on the east side of Saguaro National Park in Tucson, growth rate is faster. A cactus one inch tall may be only six years old. It may reach a full height of 46 feet in merely 173 years.



All data from studies by Warren F. Steenbergh and Charles H. Lowe, *Ecology of the Saguaro: III. Growth and Demography*. NPS Scientific Monograph Series 17, 1983